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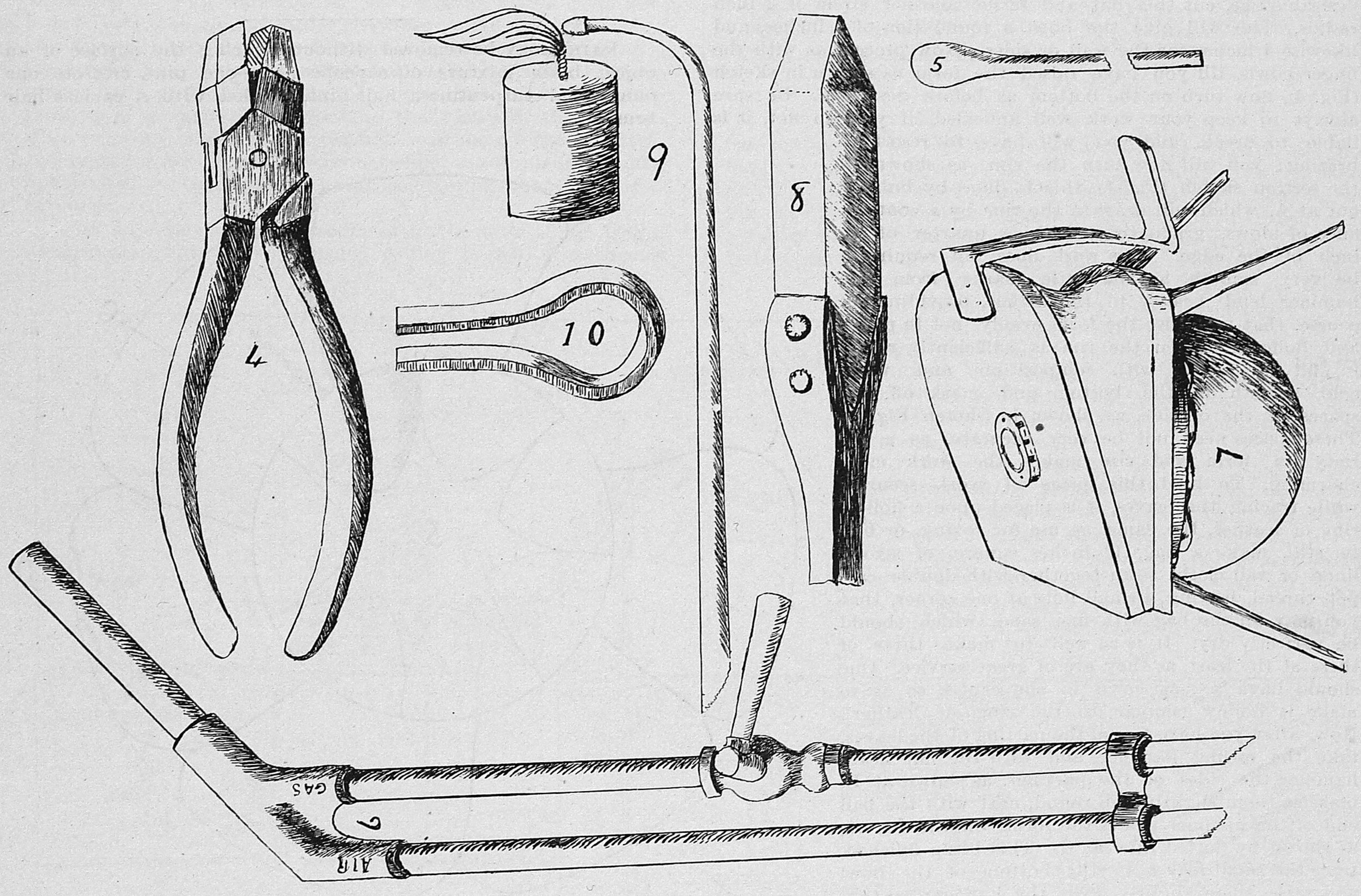
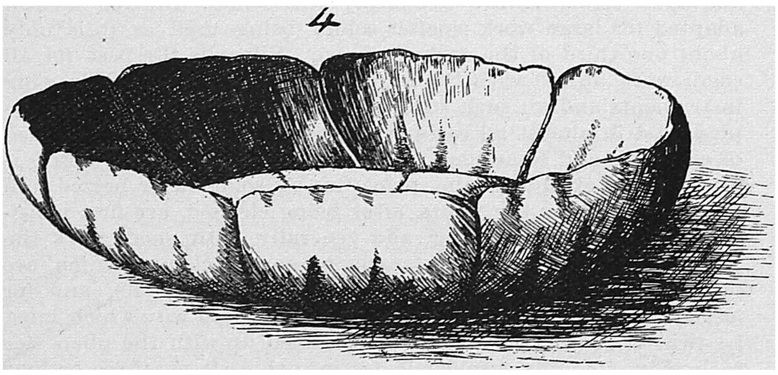
# BRASS HAMMERING AND REPOUSSE WORK.—II.

By a Practical Worker.

SOFT soldering is done by means of a copper bit (see tools, Fig. 8), using powdered sal-ammoniac and water as a flux, or fine powdered rosin. If the copper bit has not previously been tinned, it is heated in a stove, or otherwise, to a dull red, and hastily filed, to clean the metallic surface, it is then immediately rubbed, first upon a lump of sal-ammoniac and next on your bar of solder; this will completely coat the tool. It is necessary in soft soldering to clean the parts which are to be joined together, providing they have not been previously been tinned. By filing or scraping the parts, when the edges are brought together, they are slightly strewed with the powdered rosin, which should be in a little box which contains a piece of metal or spoon to deposit the rosin. You now take the soldering bit in your right hand, placing the bolt on your solder, which will take up sufficient to tack the parts together. When the parts are joined, take the solder in your left hand and melt off as much as the joint may require, and then flush with the end of your bit.



Another method for soft soldering, for small work, is by means of the mouth blow pipe (see tools, Fig. 9), and for hardening and tempering small tools, which I will touch on later. The mouth blow-pipe is a light conical brass tube, about ten or twelve inches long, from half an inch to a quarter of an inch in diameter at the end for the mouth, and about one-sixtieth of an inch at the aperture or jet; the end is bent like a quadrant so that the flames may be directly under observation. The lungs may be used for this blow-pipe with much more effect than might be expected, and with a little practice, a constant stream of air may be maintained for many minutes if the cheeks are kept well filled so that their elasticity shall serve to impel a part of the air, while the ordinary breathing is carried on by means of the nostrils. The most intense heat of the blow-pipe is that of the pointed flame. With a thick candle or a small jet of gas, and a blow-pipe placed slightly within the flame, any soft soldering, or even silver soldering can be done, by using the same flux as before mentioned, and touching the parts with a thin strip of solder as they get sufficiently heated to cause the metal to flow. A good soft solder is made of two parts of tin and one part of lead, melted together, and poured into thin strips or ribbons from a ladle; which is trailed along a flat stone or iron plate, so that the size of the solder may always be proportionate to that of the work. I give this method of soldering to suit the requirements of some who may wish to work this way. Preferably, silver solder should be used for all brass work, which requires to be neatly done, from the superior fusibility of silver solder, and from its combining so well with other metals, and the sparing manner in which it can be used, making so clean a joint that it requires no finishing. Brazing and silver soldering are essentially the same. Brazing is best adapted for large work (spelter solder being used as it is only about one third of the cost of silver). Silver is the best for all small work united with the hard solders. Jewelry and drawing instruments and all such small work are soldered with the blowpipe, and in almost all cases the work is supported upon a bed of charcoal, and sometimes, to get a greater heat, the work is also covered excepting the place to be soldered or brazed. In all hard soldering the joints, after being cleaned, are first moistened with borax and water, and generally with small work the joints are held together by forceps or spring clamps which are made of quarter inch square steel (see tools, Fig. 10), and for large work by binding wire; this is a thin iron wire which must be twisted round the work and tightened up with the pliers (see tools, Fig. 4). Silver solder is cut into thin strips, three or four inches long, and held by the pliers while soldering. Now to make the joint, heat the work by means of the blow-pipe sufficient to melt the borax, dip the end of your solder in the borax and water, and then touch the parts to be joined blowing a jet of flame on the work all the time till the solder has flushed. Should the solder not run after a piece has melted from the strip, throw a little dry powdered borax on, this being the flux, and providing the work is sufficiently heated, it will run at once. In brazing large articles (or soldering with fusible brass) when the joints are secured in position, the granulated spelter and powdered borax are mixed in a cup with just sufficient water to make it clog together. It is then spread along the joint with a strip of sheet metal, or spoon which is called a charger (see tools. Fig. 5), a piece of brass wire ten or twelve inches long, flattened out at one end is as good as anything, the heat is now applied, and when the work has become sufficiently red, the borax fuses quietly like glass; yet sometimes the borax will rise up like foam and displace the solder. Should this happen, you must draw it together again with your charger. When the work is a bright red the solder also fuses, and at this point flushes, and is absorbed in the joint. It is necessary to supply the heat as uniformly as possible; it is also necessary sometimes to move the work about to avoid melting the article as well as the solder. The work is then withdrawn from the fire as soon as the solder has run, and when set, the article may be cooled in water, without danger. To do large work a gas blow-pipe must be used (Fig. 6) and a foot-bellows (Fig. 7). These can be supplied at any jewelers' supply store, or hardware dealers. Before giving examples of cutting, binding and joining to be brazed by the blow-pipe, we will make another shape from the sheet metal, which we can finish with the tools given in my last article. It shall be a fruit or card bowl, and will take the form of a conventionalized sunflower (see sketch, Fig. 4). Scribe a circle of the size desired, say 4 inch radius, which is a very desirable size, cut this out and scribe another circle of 2 inch radius. This will give the bowl a foundation of 4 inches, and likewise 4 inches for the wall or sides. Now proceed as with the finger bowls, till you have raised the form as shown in sketch (Fig. 4), now turn on the bottom as before described. Be sure always to keep your work well annealed, if you do not, it is liable to break, and you will have to resort to brazing; you will now turn the rim, as shown in the section sketch (Fig. 5), this is done by bulging out at A, which will draw in the rim by a continuance of blows, graduating within a quarter of an inch of the edge. This work does not require to be very smooth, as the little marks from the hammer lend beauty to the article, providing, of course, that you raise the form evenly, not in plains and hollows. When the rim is sufficiently raised in, fill the shape with composition, and when cold, smooth up the bottom and mark off the spaces on the outside, as shown in (sketch Fig. 5). These spaces need not be very accurate, as a variety in form and size makes the work more charming. To hold this piece of work securely while tracing the leaves, it is placed upon a hollow ring of leather, the same as use for foxing, or better still, make a bag, 12 inches square, of strong linen or sail cloth, sewn together with double carpet thread, leaving a small hole at one corner, that you may fill the bag with fine sand, which should be perfectly dry. It is as well to make three of these at the least, as they are of great service. One should have a ring sown in the centre, so as to make it hollow (similar to the ring of leather). Now, after you have traced the parting of the leaves, take the raising hammer, and with the flat head, hammer the sides of the partings, as shown at B, making them slightly half-round, next with the ball end of the hammer model the forms on the leaves, as shown by dotted lines at C. This being finished, trace the small leaves in the bottom of the bowl and raise them slightly with the hammer, so that they will be higher on the inside. Before melting out your composition, take a small chisel and cut away the spaces between the leaves. Now melt out and file the edges smooth. After this, make a few ridges with your pliers in each leaf, as shown at D. Never forget these little finishing touches, as it is these which make the work so much more artistic.



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WHILST contracting builders and carpenters stipulate for sufficient time to do justice to their work in the construction of residences, house painters and decorators are almost invariably unduly hurried. As a consequence coats of painting are laid on walls before the underlayers are dry, or the paint is mixed with driers to an extent that seriously deteriorates it, and then follows cracking or blistering. The surface under such circumstances loses in excellence. Other specific work of the decorator proves equally faulty, and he is prevented from doing justice to himself. Nothing is more uneconomical than the enforcement of this hastiness.

AN old recipe for making a good imitation of ivory that may be used in its plastic state for decorative purposes, such as forming monograms, etc., consists of a composition made by gently boiling half an ounce of isinglass in a half pint of water till dissolved, then straining and adding flake white (basic nitrate of bismuth and a very little Naples yellow, oxide of lead and antimony). This is to be mixed with rice water and starch powder. Add to the work a final coat, and then rub this with fine sandpaper to take off the gloss.

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A GOOD part of the success of our furniture manufacturers in the production of original artistic articles is due to their little respect for inherited forms. The celebrated French styles of former days possess features which show that the makers of that period aimed at something more than style, the excellence of which causes them to be incorporated in our own furniture without copying the styles themselves.

AN old cabinet maker says that the best preparation for restoring furniture dulled or marred, or scratched is a mixture of three parts linseed oil and one part spirits of turpentine; that it not only covers disfiguring marking, but restores wood to its natural color and leaves a luster on its surface.

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AN excellent cement for broken alabaster and marble ornaments consists of equal quantities of melted beeswax and resin, mixed with plaster of Paris or baryta powder or calcined magnesia. Another cement for the same purpose is plaster of Paris, gum arabic and alum in solution.

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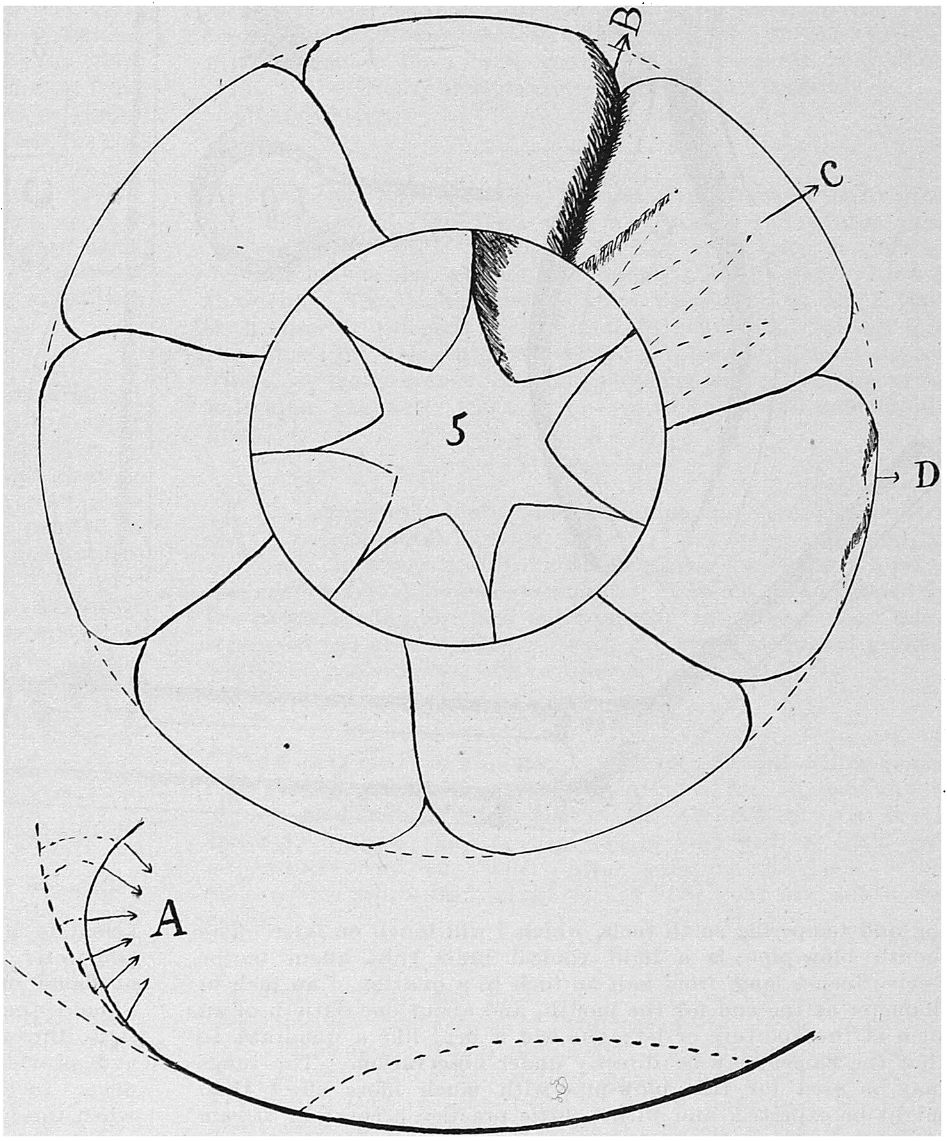
PAINT may be removed without injuring the surface of an object by a mixture of carbolic acid—one pint, creosote one ounce, and turpentine a half pint, applied with a camel's hair brush.



THERE are two methods of placing flower designs on panels, and executing them afterwards. The first is by pricking and pouncing, and then painting in the flowers, ornaments, etc., and this is a method which allows the play of individual fancy in varying the pattern, in putting in here or there a flower, bud or leaf without being restricted by the original design. To a skilled flower painter this is the great charm of the work, but for flat treatment and following outline a stencil is the most widely useful.